Digital Video/Audio/Data

Fiber Transmitter & Receiver

USER MANUAL

Quality Commitment

1、Since the date of purchase ,the products have a one-year warranty after-sales service. If you do prove that product has quality problems under this warranty period，according to testing and determine, we will provide products for free repair or replacement.(quantity fee)

2、The result of damage caused by negligence and misuse is not within the scope：

(1) Accessing to the inappropriate power；
(2) Do not meet environmental conditions of use；
(3) Not in accordance with the manual；
(4) Lightning, water, fire, etc；
(5) All the damage caused by human factors；

3、Such as the failure is existed during the process of use, the user shall not disassemble it, quality issues will need to be noticed to this company, and provide the appropriate cooperation for the service which will be carried out by us.

4、We committed that the following service of repair or replacement, as quality problems caused by that not covered under the scope of warranty, and the purchase of our products had exceeded the quality warranty period. If the problems could be repaired in the product case, we can offer paid service.

5、Final interpretation and the power of amendment, both are owned by the company.

Installation and Service Notice

Declaration：

In order to avoid personal injury, and avoid unnecessary damage to other products connected with it, as well as to install this product more smoothly, we solemnly suggest：

Before connection、installing this product, please be sure to read the instructions carefully, and pay attention to the note. According to the requirement, In order to prevent a variety of potential injury!

Caution：

- To maintain the reputation of our company, All products are within the tamper labels, please do not disassemble the machine. If the tamper labels were damaged, the product will no longer enjoy the right of free maintenance, and retain appeal right for the company's intellectual property.
- Before using this product, please read this manual carefully and properly preserve it, be sure to comply with all operational procedures！
- Before using this product, please pay particular attention to anti-static measures, which can avoid the equipment damaged.
- The company reserves the right to change the product，and it is without notice.

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1、Introduction

Digital video fiber transmitter & receiver possess core intellectual property rights, use special ASIC, adopt international most advanced Digital video and fiber transmission technique. JLWS series Digital video fiber transmitter & receiver can real time transmit up to 128 channels video,1-32channels (single-direction or bi-direction)data and audio and 1/0 and 1-4channels 10/100M Auto-adaptive Ethernet signal over one fiber with high quality. It is extremely flexible with the ability to add/ drop video, audio, RS232/RS422/RS485, E1, 10/100M Ethernet ports via plugging in/out our field-proven service cards. It is used in high-end video surveillance fields widely.

Our products process video by high-frequency digit, use uncompressed technique, avoid the adjustment trouble and low SNR and bad working stability of analog video transmitter and receiver. Supply broadcast standard video, hi-fi audio and high speed data transmission. It is easy to construct tree, star, ring and mix topology surveillance network and support more complex surveillance group network.

Our products adopt modularization design, support expand functions, remote end equipment support 1+1 fiber link protection, can automatic isolate fault node to ensure other nodes working normally. Also, It support SNMP module to manage remote and local equipments.

Analog signal and PAL,NTSC,SECAM etc signals Auto-compatible. Each video channel adopt 8bit digit coding, Baud rate is 0-2Mbps.Digital channel use gigabit transmission platform to transmit. Transmission distance of Standard type is 20KM, Max transmission distance is 120km without relay.

2、Application

- High way &Tall station surveillance
- Speedway & Railway remote surveillance
- Public security surveillance

- Surveillance and cable TV system
- Intelligent traffic monitor system
- High quality video conference
- Broadcast and TV program transmission
- Long-distance multimedia teaching
- Industrial Closed Circuit Television Surveillance
- Custom, Airport, Warehouse video monitor
- Supermarket, Bank Hall& ATM machines video surveillance
- Smart building, Government office etc safety & protection system

3、**Product Appearance**

4、Products Function

◆ Support PAL, NTSC, SECAM.
◆ Support 24bits mono, stereo, bi-directional, balanced and non-balanced audio transmission.
◆ Support RS485/RS232/RS422, rate up to 2Mbps / sec.
◆ Support CAN bus.
◆ Support 10/100M Ethernet , with adaptive interface and line of automatic switching capabilities。
◆ Support access control, switches, alarm.
◆ Support phone, can also pass the hotline.
◆ Support intercom signal.

5、Product Characteristics

◆ Digital fiber transmission platform, Multi-operation flexible setting, save investment to build complex network

- ◆ No EMI,RFI etc
- ◆ Support Audio, Data, Phone etc cross connection function and remote set on management platform
- ◆ Perfect High-grade Thunderbolt, Surge, ESD protection design to ensure long time stable working
- ◆ Good Data, Audio, Ethernet, Talk-back etc electromagnetism compatible feature
- ◆ Large-scale Proprietary IC Core and high-speed DSP technique
- ◆ Auto-switch Fiber protection (<20ms),improve the reliability of system
- ◆ Support Audio, Data regenerate and relay
- ◆ Modularized and industrialized design ensuring reliability and flexibility
- ◆ Adopt WDM/CWDM/DWDM technique
- ◆ Auto PAL/NTSC/SECAM Compatible
- ◆ Indicators for Power Supply, Video, Optic-link and Data-loop
- ◆ Large capacity of gigabit optical fiber transmission allowing of easy upgrade
- ◆ Card type, Stand-alone type,19 inch 1U/2U standard case and 4U chassis optional

6、Technology Parameters

（1） Optical Parameters

No.	Item	Parameter
1	Wavelength	850/1310nm(MM);1260~ 1360 ，1470~ 1610（SM）
2	Output power	0 dBm ~ -3 dBm/-5 dBm ~ -10 dBm
3	Sensitivity	≤-34dBm
4	Single and width	1.25G/2.5G
5	Distance	MM: 0-1km SM: 0-20km,0-60km,0-80km
6	Max power budget	15dBm/20dBm/25dBm/30dBm

（2） Video

No.	Item	Parameter
1	Channels number	1~128
2	Signal format	PAL/NTSC/SECAM
3	Input/Output electrical level	1Vp-p
4	Input/output impedance	75Ω
5	Bandwidth of each channel	8 MHz
6	Frequency	16MHz
7	Quantization grade	8/10bit
8	Differential gain	1%（representative value）
9	Differential phase	1°（representative value）
10	S/N ratio	65/70dB（representative value）
11	Color/Light delay time difference	10ns（representative value）
12	Color/Light gain difference	±10%（representative value）
13	Connector	BNC

Note：Support Forward, Reverse or Bi-direction Video

（3） Audio

No.	Item	Parameter
1	Input impedance(Line-in)	600/47K，Balance/Unbalance
2	Output impedance(Line-out)	600/10K，Balance/Unbalance
3	Input/Output electrical level	2Vp-p
4	Audio bandwidth	20Hz~20KHz
5	Frequency	48KHz
6	Quantization grade	24bits
7	S/N ratio	85dB
8	Total harmonic distortion	0.1%
9	Connector	Industrial pressure connector/RJ45/RCA

		optional

Note：Support Forward, Reverse or Bi-direction Audio

（4）PTZ, Keyboard, Matrix control data ports(support multiway data, all keyboard, Matrix, DVR, Alarm data compatible)

Connector:RJ45,DB9F,DB25F,Industrial pressure connector optional

No.	Item	Parameter
RS-232		
1	Data speed	DC-115.2Kbps
2	Data error rate	<10E-12
3	Data protocol	Support RS-232 protocol totally
4	Network connection	Support forward, reverse, bi-direction and Point to Point, Point to Multipoint connection
RS-485		
1	Data speed	DC-115.2Kbps/DC-2Mbps
2	Data error rate	<10E-12
3	Max channels	128
4	Max distance	1200 meters
5	Data protocol	Support RS-485 protocol totally, including RS-485 polling or Modbus
6	Network connection	Support forward, reverse, bi-direction and Point to Point, Point to Multipoint connection
RS-422		
1	Data speed	DC-115.2Kbps/DC-2Mbps
2	Data error rate	<10E-12
3	Max distance	1200 meters
4	Data protocol	Support RS-422 protocol totally
5	Network connection	Support forward, reverse, bi-direction and Point to Point,

		Point to Multipoint connection
Machester Code		
1	Data speed	DC-2Mbps
2	Data error rate	< 10E-12
3	Max distance	1200 meters
4	Data protocol	Support Machester protocol totally
5	Network connection	Support forward, reverse, bi-direction and Point to Point, Point to Multipoint connection

（5） Asynchronism Data

No.	Item	Parameter
1	Data ports	RS232/RS485/RS422/ Manchester code
2	Working mode	Full-duplex/Half-duplex
3	Data speed	DC-115.2Kbps
4	Data error rate	<10E-12
5	Connetor	Industrial pressure connector/RJ45 optional

Note：Support Forward, Reverse or Bi-direction Data

（6）Alarm,1/0,Remote control port(support Multi-ways, full transparent transmission)

Alarm Interface

No.	Item	Parameter
1	Alarm,1/0 connector	RJ45,DB9F,DB25F,Industrial pressure connector
2	Alarm,1/0 input signal	Any Active or Passive alarm,1/0 input. Support TTL,RS-232/422/485 or Passive switch button
3	Alarm,1/0 output signal	Any Active or Passive alarm,1/0 output. Support TTL,RS-232/422/485 or relay point output connection

（7） 10M,10/100M Ethernet connector(support multiways or mu

lti-pieces Ethernet electrical interface, Optical interface switch b uilt-in function)

Ethernet Interface

No.	Item	Parameter
1	Connector	Cat5 RJ-45 connector
2	10M connector	Full-duplex or half-duplex, IEEE 802.3 10Base-T Compatible
3	10/100M Auto-adaptive connector	Full-duplex or half-duplex, MDX, IEEE 802.3 10/100Base-T Compatible

（8）. Dimension, power supply and power consumption

No.	Item	Parameter
Wall mount or stand-alone type		
1	MINI Dimension	90mm(L) × 70mm(W) × 25mm(H)
2	Power supply	+5V input, outside power adapter connected
3	Power consumption	5W
1U rack type		
1	Dimension	1U 200mm(L) × 482mm(W) × 44mm(H)
2	Power supply	AC 110V - 220V；DC +5V
3	Power consumption	15W
2U rack type		
1	Dimension	2U 256mm(L) × 482mm(W) × 88mm(H)
2	Power supply	AC 110V - 220V input；DC +5V ； 2U concentration of power supply

3	Power consumption	80W
4	Slot number	14
4U rack type (max 16pieces card can be inserted into one 4U rack)		
1	Dimension	4U，240mm(L) × 482mm(W) × 176mm(H)
2	Power supply	AC 110V - 220V input；DC +5V ； 5U concentration of power supply,support dual power supply
3	Power consumption	100W
4	Slot number	16

7、Products Description

Digital Video Fiber Transmitter &Receiver including one piece TRANSMITTER and one piece RECEIVER. Transmitter and Receiver must be used in pair, and can't connect to other type or other producer's Digital Video Fiber Transmitter &Receiver to use together.

1. One Channel Economical Type (MINI type)

Mini type Digital Video Fiber Transmitter & Receiver is simple, small, light and easy to install. The function and quality is same to common type Transmitter & Receiver. Mostly be used in small project. Good to sporadic surveillance and multipoint surveillance. This type product support one channel video, and one data transmission over one fiber. Detail, please refer to MINI type function table.

Figure1:MINI

(1) MINI panel diagram

JL-1V1D panel

JL-1V panel

(2) Interface definition

MINI Interface definition

No.	Mark	Connector	Remark
6	A	A channel 485+	Connect the A of PTZ
7	B	B channel 485-	Connect the B of PTZ
8	Video	Video signal	Transmitter Video port for signal input Receiver Video port for signal output
5	OPT	Fiber connector	Fiber connector，FC/SC/ST
9	5V	Power port	

(3) Indicator's instruction

MINI LED

No.	Mark	Connector	Remark
1	PWR	Power LED	Power normal is red
2	SYN	SYN LED	Fiber connector normal is green
3	V1	Video LED	Video signal normal is green
4	RXD TXD	Data LED	Data input/output normal is green

(4) MINI type function table

No.	Item	Function	Max channel Number
1	Video	Forward direction Video	1
2	RS485	1 channel Single-direction or Bi-direction RS485	1 channel Bi-direction;OR 1 channels Reverse direction

(5) Technical parameter

Connector：
◆ Optical:FC/ST/SC（Optional）
◆ Video：BNC 75Ω
◆ Data：Industrial pressure connector
◆ 1/0：Industrial pressure connector
Power supply：
◆ AV power supply：AC 110V - 220V 50HZ
◆ Power consumption：≤3W
Working environment：
◆ Working temperature： -40 ℃～+70 ℃
◆ Storage temperature： -50 ℃～+85 ℃
◆ Humidity： ≤95% (non-condensing)
Dimension：
◆ Stand alone：90mm（L）×70mm（W）×25mm（H）
◆ Color： Iron gray； Material：Iron
Connector：
◆ Optical:FC/ST/SC（Optional）
◆ Video：BNC 75Ω
◆ Data：Industrial pressure connector
◆ 1/0：Industrial pressure connector
Power supply：
◆ AV power supply：AC 110V - 220V 50HZ

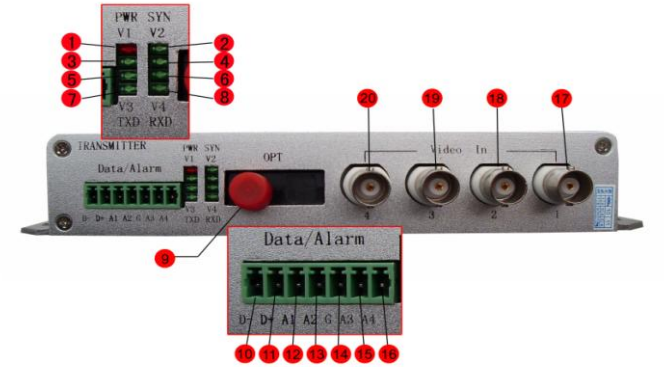
◆ Power consumption：≤3W
Working environment：
◆ Humidity： ≤95% (non-condensing)
Dimension：
◆ Stand alone：90mm（L）×70mm（W）×25mm（H）
◆ Color：Silvery white； Material：Duralumin case

2. 1 ~8 Channels Stand Alone Type

1 ~8 channels stand alone type Transmitter&Receiver is small, light, easy to install and high acclimatization. Audio, Data(RS232/ 485/422,CAB etc),Ethernet,1/0 are Flexible to configure.

Detail, please refer to 1~8 Chs Common type function table.

(1) 1~4 Chs standard panel



(2) 1~4 Chs Indicator's instruction

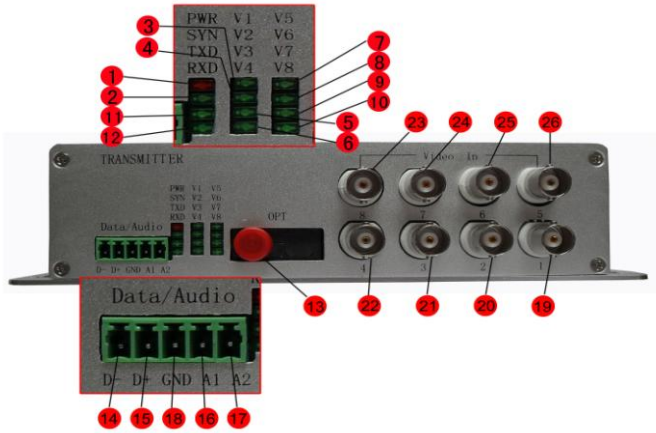
No.	Mark	Connector	Remark
1	PWR	Power LED	Power normal is red
2	SYN	SYN LED	Fiber connector normal is green

3	V1	Video LED	1 chs video signal
4	V2	Video LED	2 chs video signal
5	V3	Video LED	3 chs video signal
6	V4	Video LED	4 chs video signal
7	TXD	Data LED	Data output normal is green
8	RXD	Data LED	Data input normal is green

1~4 Chs Interface definition

No.	Mark	Name	Remark
9	OPT	Fiber connector	Fiber connector , FC/SC/ST
10	D-	First channel 485+	Connect the A of PTZ
11	D+	First channel 485-	Connect the B of PTZ
12	A1	The first audio output	
13	A2	The second audio output	
14	GND	Grounding for data/audio	
15	A3	The first audio input	
16	A4	The second audio input	
17	CH1	1 chs video signal	Transmitter Video port for signal input Receiver Video port for signal output
18	CH2	2 chs video signal	
19	CH3	3 chs video signal	
20	CH4	4 chs video signal	
21	5VDC	Power port	

(3) 5~8 Chs standard panel



（4）1~8 Chs Indicator’s instruction

No.	Mark	Connector	Remark
1	PWR	Power LED	Power normal is red
2	SYN	SYN LED	Fiber connector normal is green
3	V1	Video LED	1 chs video signal
4	V2	Video LED	2 chs video signal
5	V3	Video LED	3 chs video signal
6	V4	Video LED	4 chs video signal
7	V5	Video LED	5 chs video signal
8	V6	Video LED	6 chs video signal
9	V7	Video LED	7 chs video signal
10	V8	Video LED	8 chs video signal
11	TXD	Data LED	Data output normal is green
12	RXD	Data LED	Data input normal is green

1~8 Chs Interface definition

No.	Mark	Name	Remark
13	OPT	Fiber connector	Fiber connector ， FC/SC/ST

14	D-	First channel 485+	Connect the A of PTZ
15	D+	First channel 485-	Connect the B of PTZ
16	A1	The first audio output or input	Transmitter audio port for signal input Receiver audio port for signal output
17	A2	The second audio output or input	
18	GND	Grounding for data/audio	
19	CH1	1 chs video signal	Transmitter Video port for signal input Receiver Video port for signal output
20	CH2	2 chs video signal	
21	CH3	3 chs video signal	
22	CH4	4 chs video signal	
23	CH5	5 chs video signal	
24	CH6	6 chs video signal	
25	CH7	7 chs video signal	
26	CH8	8 chs video signal	
27	5VDC	Power port	

Technical parameter

Connector：
◆ Optical:FC/ST/SC（Optional）
◆ Video：BNC 75Ω
◆ Data：RJ45/DB9/ Industrial pressure connector
◆ Audio：Industrial pressure connector
◆ Ethernet：RJ45
◆ 1/0：Industrial pressure connector
Power supply：
◆ AC power supply：220VAC±30% 50HZ
◆ DC－48V：48VDC±20%
◆ DC＋24V：24VDC±20%
◆ Power consumption：≤5W
Dimension：
◆ Standalone：138（L）×175（W）×30（H）mm
◆ Card type：4U rack centralized installation

（5）4U rack-mountable expansion 1-8

1~8 chs extended optical video, increase the variety of expansion interfaces based on the common type，its function has been improved so much. Please refer to the configuration table of functions.

（4u） Extended stand-alone type

No.	Item	Function	Max channel Number
1	Video	Forward video	64
2	Audio	Single-direction or Bi-direction Audio	64/32
3	RS232	RS232	16
4	RS485	RS485	16
5	CAN Bus	Support CAN Bus	16
6	1/0	Single-direction or Bi-direction	16
7	Power	Double backup power support	2

Technical parameter

Connector：
◆ Optical:FC/ST/SC（Optional）
◆ Video：BNC 75Ω
◆ Data：RJ45/Industrial pressure connector
◆ Audio：Industrial pressure connector
◆ Ethernet：RJ45
◆ 1/0：Industrial pressure connector
Power supply：
◆ AC power supply：+5VDC
◆ DC－48V：48VDC±20%
◆ DC＋24V：24VDC±20%
◆ Power consumption：≤5W

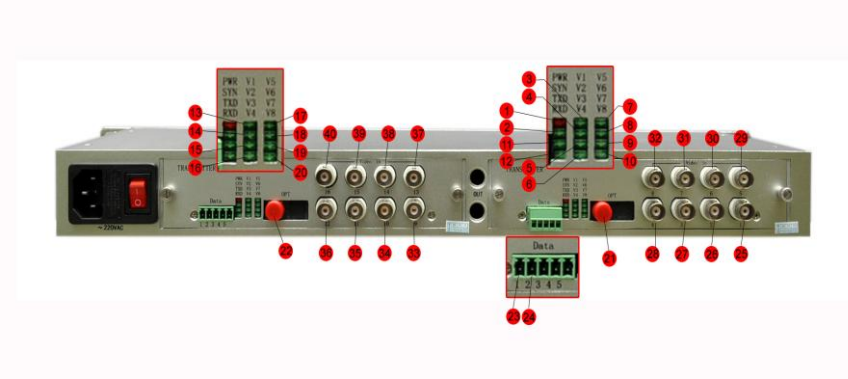
Working environment
◆ Working temperature： -40 ℃～+70 ℃
◆ Storage temperature： -50 ℃～+85 ℃
◆ Humidity： ≤95% (non-condensing)
Dimension：
◆ Standalone：137mm（L）×186mm（W）×44mm（H）
◆ Card type：4U rack centralized installation

Note：Extended type interface definition refer to the random distribution of the wiring diagram.

3. 1U Rack type 16channels Transmitter&Receiver

1U height,19 inch rack type, Max 16 channels video，4 channels RS485 data,8 channels bi-direction audio or 16 channels single-direction audio can be transmit over two or four fibers. Easy to install and manage for mid or small project.

Front Panel of 1U 16chs Transmitter&Receiver



Back Panel of 1U 16 chs Transmitter&Receiver

No.	Mark	Connector	Remark
1	PWR	Power LED	Power normal is red
2	SYN	SYN LED	Fiber connector normal is green
3	V1	Video LED	1 chs video signal
4	V2	Video LED	2 chs video signal
5	V3	Video LED	3 chs video signal
6	V4	Video LED	4 chs video signal
7	V5	Video LED	5 chs video signal
8	V6	Video LED	6 chs video signal
9	V7	Video LED	7 chs video signal
10	V8	Video LED	8 chs video signal
11	TXD	Data LED	Data output normal is green
12	RXD	Data LED	Data input normal is green
13	V9	Video LED	9 chs video signal
14	V10	Video LED	10 chs video signal
15	V11	Video LED	11 chs video signal
16	V12	Video LED	12 chs video signal
17	V13	Video LED	13 chs video signal
18	V14	Video LED	14 chs video signal
19	V15	Video LED	15 chs video signal
20	V16	Video LED	16 chs video signal

21	OPT1	Fiber connector	Fiber connector，FC/SC/ST
22	OPT1	Fiber connector	Fiber connector，FC/SC/ST
23	D-	First channel 485+	Connect the A of PTZ
24	D+	Firstchannel 485-	Connect the B of PTZ
25	CH1	1 chs video signal	Transmitter Video port for signal input Receiver Video port for signal output
26	CH2	2 chsvideo signal	
27	CH3	3 chsvideo signal	
28	CH4	4 chsvideo signal	
29	CH5	5 chsvideo signal	
30	CH6	6 chsvideo signal	
31	CH7	7 chsvideo signal	
32	CH8	8 chsvideo signal	
33	CH9	9chs video signal	
34	CH10	10chsvideo signal	
35	CH11	11chsvideo signal	
36	CH12	12chsvideo signal	
37	CH13	13chsvideo signal	
38	CH14	14chsvideo signal	
39	CH15	15chsvideo signal	
40	CH16	16chsvideo signal	

1U 16channels Transmitter&Receiver function table

No.	Item	Function	Max channel Number
1	Video	Forward or Reverse video	16
2	Audio	Single-direction Audio	16
3	RS232	RS232	2
4	RS485	RS485	4
5	Ethernet	10/100/1000M	2

1U 16chs Transmitter&Receiver Technical parameter

Connector：
◆ Optical:FC/ST/SC（Optional）
◆ Video：BNC 75Ω
◆ Data：Industrial pressure connector
◆ Audio：Industrial pressure connector
◆ Ethernet：RJ45
Power supply：
◆ AC power supply：220VAC±30% 50HZ
◆ DC－48V：48VDC±20%
◆ DC＋24V：24VDC±20%
◆ Power consumption：≤5W
Working environment
◆ Working temperature： -40 ℃～+70 ℃
◆ Storage temperature： -50 ℃～+85 ℃
◆ Humidity： ≤95% (non-condensing)
Dimension：
◆ Standalone：200（L）×482（W）×44（H）mm

4. 2U Rack type

2U Rack type Transmitter&Receiver can transmit up to 32 channels Video, 8 channels Data,32 channels Single-direction Audio, Ethernet etc over one fiber or two fibers. Adopt high-capacity power supply which has protection function to ensure the stability of working. Detail, please refer to 32 Chs Transmitter&Receiver function table.

2U Transmitter&Receiver Technical parameter

machinery：
◆ Material：Aluminum
◆ Surface Treatment：Oxide blasting
◆ Color: Silvery white or black
Power supply：
◆ AC power supply：220VAC±30% 50HZ
◆ DC－48V：48VDC±20%

◆ DC＋24V：24VDC±20%
◆ Power consumption：≤5W
Working environment
◆ Working temperature： -40 ℃～+70 ℃
◆ Storage temperature： -50 ℃～+85 ℃
◆ Humidity： ≤95% (non-condensing)
Dimension：
◆ Standalone：256（L）×482（W）×88（H）mm

5. 4U Rack type Transmitter&Receiver

4U Rack type has many kinds application：

First: Transmit 64 channels Video over one fiber, meet the large capacity, Multiway centralized Video transmission demand. Max 64 channels Video,32 channels Data,32 channels Bi-direction (or 64 channels Single-direction) be transmit by one 4U Rack type transmitter. It has high cost performance for big project.

Second：Be used as centralized management of back end. Good to big project which has dispersive front end and many surveillance points.4U Rack type Receiver has 18slots, 2 slots for power supply and 16slots for install Receiver. Can receive up to 64 channels Video.

Third: If the project over 64 channels video transmission, then two 4U Rack type Transmitter & Receiver can be used together for extend to 128 channels or more video transmission.

4U Transmitter&Receiver function table

No.	Item	Function	Max channel Number
1	Video	Forward or Reverse video	64
2	Audio	Single-direction Audio	64(Single-direction
3	RS232	RS232	16
4	RS485	RS485	32
6	Ethernet	10/100/1000M	8

4U Rack Technical parameter

Connector：
◆ Optical:FC/ST/SC（Optional）
◆ Video：BNC 75Ω
◆ Data：DB9/ Industrial pressure connector
◆ Audio：Industrial pressure connector
◆ Ethernet：RJ45
machinery：
◆ Material：Aluminum
◆ Surface Treatment：Oxide blasting
◆ color：Silvery white or black
Power supply：
◆ AC power supply：220VAC±30% 50HZ
◆ DC－48V：48VDC±20%
◆ DC＋24V：24VDC±20%
◆ Power consumption：≤5W
Working environment
◆ Working temperature： -40 ℃～+70 ℃
◆ Storage temperature： -50 ℃～+85 ℃
◆ Humidity： ≤95% (non-condensing)
Dimension：
◆ Standalone：240（L）×482（W）×176（H）mm

8、Status Indication

Indicator's instruction sheet

No.	Mark	Equipment type	Explanation	Normal symptoms	Issue judgment
1	PWR	MINI type	Power indicator	On when power normal	DC5V power supply input normally, indicator On; when the voltage input wrong or inside circuit has fault, indicator Off
	PWR	1~8chs common type			
	POWER	1U,2U,4U Rack type			
2	SYN	MINI type	SYN indicator	On when Transmitter connected to Receiver	Fiber link normal, indicator On; when fiber link or inside circuit has fault, No optical signal output, indicator Off
	SYN	1~8chs common type			
3	V1	MINI type	Video indicator	On when video transmission	Video input, the corresponding video indicator On, when no video input, indicator Off, please check camera and BNC connector and Coaxial video cable etc.
	Vx	1~8chs common type			
4	Data	MINI type	Data indicator	On when data transmission	If the indicator On when no data or control PZT, indicator Off, please check the data connection is correct or not and check the keyboard output whether is right
	RXD	1~8chs common type	Reading data indicator	On when receive data	
	TXD	1~8chs common type	Writing data indicator	On when transmit data	

9、Products Installation Stepsd and Use Method

（1） Open the equipment packing, check the equipment appearance first，the equipment should be no damage and abnormal shake

（2） Connecting optical fiber: output port with FC/PC single- mode Optical transmitter jump line connected to the light optical receiver

input, Optical receiver and transmitter SYN are bright green lights, says are connected correctly channel .

（3） Connect the ac：

- The packing box to ac POWER adapter access AC2 20V POWER, dc output insert optical transmitter and Optical receiver POWER input (POWER)
- Optical transmitter is light red that optical transmitter working normally
- Optical receiver is light red that optical receiver working normally.

（4） Power and light signals are working properly, scene image signal through Video coaxial cable into optical transmitter any of the Video In Video input, the optical image signals to the optical receiver, again through the coaxial cable of the Video receiver will Video mouth Out corresponding signals to monitor equipment, can image monitoring or records.

（5） No the amplitude, frequency PRCPM analog optical tr ansceiver of adjustable interference

- 8/10 digital coding and compressed video transmission, no damage type, transparent support any video signal of high resolution
- Supports up to 64 video, 32 two-way audio and data signals, switch and 1-4 Ethernet data synchronization, with fiber transmission
- Adaptive technology, NTSC and PAL automatic compatible SECAM video formats

- Using industrial devices, surface-mount technology, long time running stable and reliable
- Possess power, light signals, the panel data signals such as state instructions
- Adaptive technology, without any field of electricity, light regulation
- Video, audio, data interface has perfect lightning and surge protection
- Video, audio, data interface has perfect lightning and surge protection

（6） Data signals (RS485) access optical receiver's data port, when the data transmission, optical receiver and transmitter TXD, the light shining light RXD data, data transmission is normal.

10、Common troubleshooting methods

NO.	Symptoms	Possible Cause
1	No operations, PWR LED is off	1、verify that it is a dedicated power adapter or not 2、verify the contact of wiring socket is good or not 3、verify the external power supply is 5V or not 4、if the above is correct , Please contact the after-sales` department
2	No Video Out	1、verify that SYN LED is off or not，if it's off , Please start checking from the following two-step；if not , please start checking from the following four-step 2、verify that optical transmitter connected the camera or not，optical receiver connected the monitor or not , the two can not be reversed 3、verify the fiber connection optical transmitter, optical fiber surface is very dirty or not, verify the optical receiver connected, optical fiber surface is very dirty or not 4、verify the video input cable, optical transmitter, BNC connector contact is normal if good, Check the video receiver output cables, BNC connector contact is normal or not 5、check the camera, check the monitor

		6、if the above is correct, please contact the after-sales` department
3	Data cannot be transmitted or received	1、verify that both of the agreement of the keyboard and the PTZ's shall be consistent, verify that both of the keyboard data rate and the PTZ setting data rate shall be consistent 2、check the transmission of control data, the receiver RXD indicator light is shining or not, if it is, Please start checking from the following two-step; if not , Please start checking from the following four-step 3、Check the connector of data input to the receiver is good or not; check the connector of transmitter's data line is clear or not 4、According to the equipment instructions , verify that wiring is right or not; and pay attention to the 485 bus, which could not be reversed. 5、Check the optical fiber is clear or not 6、if the above is correct , Please contact the after-sales` department
4	Image has snowflake points or not clear	1、Using the power meter test, ensure that arriving optical power is within the scope of device sensitivity 2、Ensure video thread interference is around

11、Packing List

NO.	Item	Quantity
1	Transmitter	one
2	Receiver	one
3	220V AC power adapter	two pieces
4	User manual	one
5	Warranty Card	one
6	Moisture-proof bag	one